

## INTERNATIONAL SEARCH REPORT

PCT/GB 03/02367

## A. CLASSIFICATION OF SUBJECT MATTER

IPC 7 C07C7/20 C07C239/08 C07C239/12 C07C239/16 C07D205/04  
 C07D207/04 C07D207/20 C07D209/04 C07D209/86 C07D225/02  
 C07D295/02 C07D295/22 C07D215/06 C07D211/94 C08K5/3435

According to International Patent Classification (IPC) or to both national classification and IPC

## B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

IPC 7 C07C C07D C08K

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practical, search terms used)

EPO-Internal, CHEM ABS Data, BEILSTEIN Data

## C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	US 3 265 751 A (GEORGE MCCOY ET AL) 9 August 1966 (1966-08-09)	1-3,6, 11,12
Y	the whole document	4,5,7-10
X	US 3 265 752 A (CASE WHITON ALFRED ET AL) 9 August 1966 (1966-08-09)	1-3,6, 11,12
Y	the whole document	4,5,7-10
X	WO 00 14175 A (A H MARKS AND COMPANY LIMITED ; BUSHBY RICHARD (GB); LORD NIGEL (GB) 16 March 2000 (2000-03-16)	1-3,6-12
Y	*abstract, page 3, lines 6-26; page 4, last paragraph; page 5, first paragraph and claims 1-5*	4,5
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Further documents are listed in the continuation of box C.



Patent family members are listed in annex.

## \* Special categories of cited documents:

\*A\* document defining the general state of the art which is not considered to be of particular relevance

\*E\* earlier document but published on or after the international filing date

\*L\* document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)

\*O\* document referring to an oral disclosure, use, exhibition or other means

\*P\* document published prior to the international filing date but later than the priority date claimed

\*T\* later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention

\*X\* document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone

\*Y\* document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art.

\*&amp;\* document member of the same patent family

Date of the actual completion of the international search

26 August 2003

Date of mailing of the international search report

08/10/2003

Name and mailing address of the ISA

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## C.(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	DATABASE CAPLUS 'Online! CHEMICAL ABSTRACTS SERVICE, COLUMBUS, OHIO, US; retrieved from CA Database accession no. 1998:643472 XP002252353	1-3,11, 12
Y	abstract & LI, ZHANG, JIA AND HU: "Inhibition effect on radical polymerization of vinyl monomers.XXI. Studies on behavior of some substituted hydroxylamine in the copolymerization of styrene with methyl methacrylate" LANZHOU DAXUE XUEBAO, ZIRAN KEXUEBAN, vol. 34, no. 1, 1998, pages 69-75, ---	4-10
X	DATABASE CAPLUS 'Online! CHEMICAL ABSTRACTS SERVICE, COLUMBUS, OHIO, US; retrieved from CA Database accession no. 1993:255417 XP002252354 abstract & ZHANG, LI AND YANG: "Inhibiting effect of radical polymerization of vinyl monomers.(XV). Behavior of some substituted hydroxylamines in the copolymerization of styrene with acrylonitrile" GAODENG XUEXIAO HUAXUE XUEBAO, vol. 13, no. 10, 1992, pages 1319-1322, ---	1-3,11, 12
X	DATABASE CAPLUS 'Online! CHEMICAL ABSTRACTS SERVICE, COLUMBUS, OHIO, US; retrieved from CA Database accession no. 1991:164864 XP002252355	1-3,11, 12
Y	abstract & ZHANG, LI, BAI AND LU: "Inhibiting effect of radical polymerization for vinyl monomers. XI. Studies on the inhibition and their chain transfer constants of substituted hydroxylamine compounds in bulk polymerization of vinyl acetate and acrylonitrile" GAOFENZI XUEBAO, vol. 2, 1990, pages 239-243, ---	4-10
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C.(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT		
Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	DATABASE CAPLUS 'Online! CHEMICAL ABSTRACTS SERVICE, COLUMBUS, OHIO, US; retrieved from CA Database accession no. 1991:164863 XP002252356	1-3, 11, 12
Y	abstract & ZHANG, LI, WANG, LU AND FENG: "Inhibiting effects of radical polymerization of vinyl monomers. X. Studies on the inhibition and its mechanism of hydroxylamines compounds in free radical polymerization of styrene" GAOFENZI XUEBAO, vol. 2, 1990, pages 233-238,	4-10
X	DATABASE CAPLUS 'Online! CHEMICAL ABSTRACTS SERVICE, COLUMBUS, OHIO, US; retrieved from CA Database accession no. 1990:217575 XP002252357	1-3, 11, 12
Y	abstract & WANG, FENG, CAI, ZHANG, LU AND LI: "An ESR study of nitroxide radicals produced in the radical polymerization of vinyl monomers" BOPUXUE ZAZHI, vol. 6, no. 3, 1989, pages 369-376,	4-10
X	DATABASE CAPLUS 'Online! CHEMICAL ABSTRACTS SERVICE, COLUMBUS, OHIO, US; retrieved from CA Database accession no. 1986:627842 XP002252358 abstract & BORTOLUS, DELLONTE, FAUCITANO AND GRATANI: "Photostabilizing mechanisms of hindered-amines light stabilizers: interaction with electronically excited aliphatic carbonyls" MACROMOLECULES, vol. 19, no. 12, 1986, pages 2916-2922,	1-3, 11, 12
X	US 2 843 481 A (BLOUT ELKAN R ET AL) 15 July 1958 (1958-07-15) the whole document	1-3, 6
X	US 6 031 130 A (MOTOKI MASUJI ET AL) 29 February 2000 (2000-02-29)	1-4, 6
Y	*abstract; column 1, lines 1-24; column 4, lines 7-67; column 5 and example 5*	5, 7-12
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C.(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT		
Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	<p>DATABASE CROSSFIRE BEILSTEIN 'Online! Beilstein Institut zur Förderung der Chemischen Wissenschaften, Frankfurt am Main, DE; retrieved from BEILSTEIN Database accession no. 1129 XP002252345 abstract &amp; WOLFFENSTEIN: CHEM. BER., vol. 28, 1895, page 1465</p>	1,2
X	<p>DATABASE CROSSFIRE BEILSTEIN 'Online! Beilstein Institut zur Förderung der Chemischen Wissenschaften, Frankfurt am Main, DE; retrieved from BEILSTEIN Database accession no. 12432 XP002252346 abstract &amp; MOEHRLE, H. AND LAPPENBERG, M.: ARCH. PHARM., no. 311, 1978, pages 692-697,</p>	1,2,4
X	<p>DATABASE CROSSFIRE BEILSTEIN 'Online! Beilstein Institut zur Förderung der Chemischen Wissenschaften, Frankfurt am Main, DE; retrieved from BEILSTEIN Database accession no. 1560342 XP002252347 abstract &amp; KREHER AND PAWELCZYK: TETRAHEDRON LETT., 1966, pages 2591-2594,</p>	1-3
X	<p>DATABASE CROSSFIRE BEILSTEIN 'Online! Beilstein Institut zur Förderung der Chemischen Wissenschaften, Frankfurt am Main, DE; retrieved from BEILSTEIN Database accession no. 1421020 XP002252348 abstract &amp; MURAHASHI, MITSUI, WATANABE AND ZENKI: TETRAHEDRON LETT., vol. 24, no. 10, 1983, pages 1049-1052,</p>	1-3
Y	<p>EP 0 512 951 A (CIBA GEIGY AG) 11 November 1992 (1992-11-11) *abstract; pages 2 and 3; page 6, lines 6-56; examples 4, 6, 9-13 and the claims*</p>	1-12

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C.(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT		
Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
Y	US 5 446 220 A (ARHANCET GRACIELA B) 29 August 1995 (1995-08-29) *abstract; column 2, lines 25-68; column 3, first paragraph; the examples and the claims* -----	1-12

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## Box I Observations where certain claims were found unsearchable (Continuation of Item 1 of first sheet)

This International Search Report has not been established in respect of certain claims under Article 17(2)(a) for the following reasons:

1. ☐ Claims Nos.:  
because they relate to subject matter not required to be searched by this Authority, namely:
  
2. ☒ Claims Nos.:  
because they relate to parts of the International Application that do not comply with the prescribed requirements to such an extent that no meaningful International Search can be carried out, specifically:  
see FURTHER INFORMATION sheet PCT/ISA/210
  
3. ☐ Claims Nos.:  
because they are dependent claims and are not drafted in accordance with the second and third sentences of Rule 6.4(a).

## Box II Observations where unity of invention is lacking (Continuation of Item 2 of first sheet)

This International Searching Authority found multiple inventions in this International application, as follows:

1. ☐ As all required additional search fees were timely paid by the applicant, this International Search Report covers all searchable claims.
  
2. ☐ As all searchable claims could be searched without effort justifying an additional fee, this Authority did not invite payment of any additional fee.
  
3. ☐ As only some of the required additional search fees were timely paid by the applicant, this International Search Report covers only those claims for which fees were paid, specifically claims Nos.:
  
4. ☐ No required additional search fees were timely paid by the applicant. Consequently, this International Search Report is restricted to the invention first mentioned in the claims; it is covered by claims Nos.:

Remark on Protest

- ☐ The additional search fees were accompanied by the applicant's protest.
- ☐ No protest accompanied the payment of additional search fees.

FURTHER INFORMATION CONTINUED FROM PCT/ISA/ 210

Continuation of Box I.2

Claims 1-11 are product claims. Therefore any cyclic hydroxylamine which fulfils the requirements disclosed in the claims/composition including them is novelty destroying for the subject-matter of the claims.

The initial phase of the search revealed a very large number of documents relevant to the issue of novelty for claims 1-4 and 6-11. So many documents were retrieved that it is impossible to determine which parts of the claims may be said to define subject-matter for which protection might legitimately be sought (Article 6 PCT). For these reasons, a meaningful search over the whole breadth of the claims is impossible. Only some of the documents found are mentioned in the search report.

The applicant's attention is drawn to the fact that claims, or parts of claims, relating to inventions in respect of which no international search report has been established need not be the subject of an international preliminary examination (Rule 66.1(e) PCT). The applicant is advised that the EPO policy when acting as an International Preliminary Examining Authority is normally not to carry out a preliminary examination on matter which has not been searched. This is the case irrespective of whether or not the claims are amended following receipt of the search report or during any Chapter II procedure.

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Patent document cited in search report		Publication date	Patent family member(s)	Publication date
US 3265751	A	09-08-1966	NONE	
US 3265752	A	09-08-1966	NONE	
WO 0014175	A	16-03-2000	AU 5752299 A WO 0014175 A1	27-03-2000 16-03-2000
US 2843481	A	15-07-1958	DE 1031637 B FR 1134839 A GB 782217 A US 2868077 A	04-06-1958 18-04-1957 04-09-1957 13-01-1959
US 6031130	A	29-02-2000	JP 10330342 A	15-12-1998
EP 0512951	A	11-11-1992	US 5185448 A DE 69221022 D1 DE 69221022 T2 EP 0512951 A1 JP 6057033 A	09-02-1993 04-09-1997 22-01-1998 11-11-1992 01-03-1994
US 5446220	A	29-08-1995	AT 212657 T AU 680746 B2 AU 2033095 A CA 2150398 A1 DE 69525191 D1 DE 69525191 T2 EP 0690117 A2 ES 2170784 T3 JP 8053377 A	15-02-2002 07-08-1997 18-01-1996 31-12-1995 14-03-2002 20-06-2002 03-01-1996 16-08-2002 27-02-1996